8 Summary

Clinical efficacy of an internal teat sealer in combination with an antibiotic dry cow product for prevention of intramammary infections during the dry period

The objective of this field trial was the clinical efficacy of the internal teat sealer OrbeSeal® applied in addition to the dry cow product Benestermycin® (5ml, containing 280mg Benethamin-Penicillin, 100mg Penethamat-hydro-iojodide, 100mg Framycetinsulfate). Two contralateral quarters of every cow were treated with OrbeSeal® additionally to the dry cow product Benestermycin® (splitted-udder-design). The clinical efficacy was evaluated by the incidence of intramammary infections, the cure rate of intramammary infections and the occurrence of mastitis in the first 100 days in milk, particularly with regard to high milk yield, hyperkeratosis at the teat end and high somatic cell count at drying off.

A total of 366 cows were enrolled. From these cows milk samples were collected at dry off, at calving and 5 to 8 days in milk for cytological and bacteriological analysis.

The udders were examined for signs of infections and the teat end condition was examined for hyperkeratosis during the whole dry period.

The results of bacteriological analysis of the milk samples showed for both treatment groups a similar number of bacteriologically positive quarters (20,4% vs 21,7%). The results of udder examinations and the teat end condition were similar between the treatment groups at drying off and during the dry period.

The somatic cell count 5 and 8 days after calving revealed significantly more quarters treated additionally with OrbeSeal® (22,5%) than quarters treated only with Benestermycin® (17,1%) in class 2 (101-200 cells x 10^3/ml). Significantly more quarters were found in class 4 (501-1000 cells x 10^3/ml) treated only with Benestermycin® (5,1%) than treated additionally with OrbeSeal® (2,5%).

The new infection rate at any time was slightly lower for quarters treated additionally with OrbeSeal®. These differences, however, were not significant.

With regard to risk factors like high milk yield (> 25 kg), medium or high level of hyperkeratosis or a high cell count at drying off, the new infection rate was slightly lower in the quarters treated additionally with OrbeSeal®. This was also not significant. Regression analysis of the new infection rate between drying off and 5 to 8 days after calving showed that tight quarters and hint quarters were at higher risk of infection.

The cure rate was similar for both treatment groups at any time of the study. Regression analysis showed a higher chance of being cured between drying off and day 5 to 8 after

calving for quarters treated additionally with OrbeSeal®. Cows with a milk yield over 25kg at drying off had a significant lower chance of being cured.

There were no significant differences between the treatment groups in the proportion of mastitis between calving and 100 days in milk. During the first 7 days in milk there were significantly more cases of mastitis in quarters treated additionally with OrbeSeal® (7,2%) than in the control quarters (3,7%). Quarters with a high cell count (501-1000 cells x 10^3/ml) at drying off had a significantly higher proportion of mastitis in the OrbeSeal®-group than in the control group (39,4% vs 22,1%). Regression analysis showed also that quarters with a high somatic cell count at drying off and with a dry cow period shorter than 40 days were at higher risk of mastitis.

The results revealed that the additional application of the internal teat sealer had no pronounced positive effect for the prevention of new intramammary infections.

Further research is required to determine the correlation between new intramammary infections, cure rates of intramammary infections, mastitis and the use of OrbeSeal® with regard to predisposing factors of the cows.